IN THE UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF TENNESSEE
AT NASHVILLE

TERRY LYNN KING,	)	
	)	
Plaintiff,	)	**CAPITAL CASE**
	)	
v.	)	**Case No. 3:18-cv-01234**
	)	
TONY PARKER, et al.,	)	**JUDGE CAMPBELL**
	)	
Defendants.	)	

DEFENDANTS' STATEMENT OF UNDISPUTED MATERIAL FACTS

I. Development of Tennessee's Lethal Injection Protocol

1. All death sentences in Tennessee are carried out at Riverbend Maximum Security Institution ("RMSI"). (Ex. 1, Executioner Dep. 27:15-16.)

RESPONSE:

2. Prior to 2013, TDOC's lethal injection protocol called for the following: sodium thiopental, pancuronium bromide, and potassium chloride. (*Workman v. Bredesen*, 486 F.3d 896, 902 (6th Cir. 2007); Ex. 1, Executioner Dep. 115:10-14; 122:6-10.)

RESPONSE:

3. When sodium thiopental became unavailable, TDOC changed the lethal injection protocol from the original three-drug protocol to a single-drug lethal injection protocol using pentobarbital. (*West v. Schofield*, 519 S.W.3d 550, 552 (Tenn. 2017), *cert. denied sub nom. West v. Parker*, 138 S. Ct. 476 (2017), and *cert. denied sub nom. Abdur'Rahman v. Parker*, 138 S. Ct. 647 (2018); Ex. 2, Inglis Dep. 28:5-29:11.).

RESPONSE:

4. When TDOC was unable to acquire pentobarbital, TDOC revised the protocol again. (*Abdur'Rahman v. Parker*, 558 S.W.3d 606, 611 (Tenn. 2018); Ex. 3, Drug Procurer Dep. 162:18-20; 215:15-216:16; Ex. 4, TDOC 30(b)(6) Dep. 84:20-85:4; Ex. 5, Parker Dep. Vol. 2, 182:14-18, 186:3-8.)

RESPONSE:

5. On July 5, 2018, TDOC revised the protocol to make the current three-drug protocol "the exclusive method of execution by lethal injection in Tennessee." (*Abdur'Rahman*, 558 S.W.3d at 612.)

RESPONSE:

6. The current 104-page protocol is titled "Lethal Injection Execution Manual/Execution Procedures for Lethal Injection" (hereinafter, "Protocol"). (Ex. 6, Protocol at 1-104.)

RESPONSE:

7. In developing the Protocol, TDOC reviewed the lethal injection protocols of multiple other states and relied on input from the Drug Procurer, the Pharmacist, multiple doctors, and individuals familiar with the execution protocols in other states. (Ex. 4, TDOC 30(b)(6) Dep. 69:15-73:9, 78:4-13.)

RESPONSE:

8. The Protocol requires that the execution proceed with administration of the 500mg of midazolam in two syringes of 50 cc each, followed by 50 cc of saline in one syringe; then the 100mg of vecuronium bromide in two syringes of 50 cc each, followed by another 50 cc of saline in one syringe; and finally, the 240 mEq of potassium chloride in two syringes of 60 cc each, followed by a final syringe of 50 cc of saline. (Ex. 6, Protocol at 39-40, 44, 84.)

RESPONSE:

9. Plaintiff challenges the constitutionality of the Protocol on its face. (Ex. 7, Plf.'s Responses to First Set of Req. for Adm. at 2-3.)

RESPONSE:

II. Effects of the Three Lethal Injection Chemicals

10. The LIC specified in the Protocol are 100 ml of a 5mg/ml solution (for a total of 500 mg) of Midazolam; 100 ml of a 1 mg/ml solution (for a total of 100 mg) of Vecuronium Bromide); and 120 ml of a 2 mEq/ml solution (for a total of 240 mEq) of Potassium Chloride. (Ex. 6, Protocol at 34.)

RESPONSE:

11. Lethal injection is the most humane method of deliberately ending a person's life. (Ex. 8, Williams Dep. 114:9-14.)

RESPONSE:

12. Essential endpoints of general anesthesia include amnesia, unconsciousness and immobility in response to a noxious stimulus. (Ex. 9, Antognini Rep. at 5.)

RESPONSE:

13. Immobility is a result distinct from unconsciousness. (Ex. 9, Antognini Rep. at 5-6.)

RESPONSE:

14. Movement does not equate to consciousness. (Ex. 9, Antognini Rep. at 5-6.)

RESPONSE:

15. A person may move while receiving noxious stimuli without being conscious. (Ex. 9, Antognini Rep. at 6-7.)

RESPONSE:

16. The dose of a drug needed to produce unconsciousness is less than that needed to produce immobility. (Ex. 9, Antognini Rep. at 6.)

RESPONSE:

17. Anesthetics produce immobility by acting on the spinal cord. (Ex. 9, Antognini Rep. at 6.)

RESPONSE:

18. Movements occurring during noxious stimulation of an unconscious person is a spinal cord-mediated process. (Ex. 9, Antognini Rep. at 6.)

RESPONSE:

19. The spinal cord can produce complex movements without consciousness. (Ex. 9, Antognini Rep. at 7.)

RESPONSE:

20. A person can withdraw, cough, chew, thrash, or strain in response to a noxious stimulus without purposeful movement or awareness. (Ex. 9, Antognini Rep. at 8.)

RESPONSE:

21. Patients commonly make a gurgling sound while anesthetized. (Ex. 10, Van Norman Dep. 34:16-20.)

RESPONSE:

22. Patients commonly snore while anesthetized. (Ex. 10, Van Norman Dep. 35:25-36:10.)

RESPONSE:

23. Pain is the conscious awareness of an actual or perceived noxious stimulus. (Ex. 9, Antognini Rep. at 7.)

RESPONSE:

24. Pain is always involved in death; a painless death is extremely rare. (Ex. 8, Williams Dep. 55:5-18.)

RESPONSE:

25. A noxious stimulus is only painful when applied to a conscious subject. (Ex. 9, Antognini Rep. at 7.)

RESPONSE:

26. When a person is under the effects of general anesthesia, they are "unarousable even with painful stimulus." (Ex. 11, Stevens Rep. at 10.)

RESPONSE:

A. Use and Efficacy of Midazolam

27. The purpose of the midazolam in the Protocol is to render the inmate unconscious. (Ex. 4, TDOC 30(b)(6) Dep. 101:10-12.)

RESPONSE:

28. The dose of midazolam needed to produce unconsciousness is below that needed to produce immobility. (Ex. 9, Antognini Rep. at 6.)

RESPONSE:

29. Midazolam causes some people to hiccup. (Ex. 10, Van Norman Dep. 116:4-7.)

RESPONSE:

30. Midazolam is a short-acting benzodiazepine, meaning it is metabolized quickly and has a shorter effect time. (Ex. 9, Antognini Rep. at 8; Ex. 11, Stevens Rep. at 18; Ex. 12, Stevens Dep. 152:2-13.)

RESPONSE:

31. Midazolam is useful for the induction of general anesthesia. (Ex. 13, Antognini Dep. 209:19-210:3; Ex. 14, Patel Rep. at n. 29 (citing to Wang J, Sun P, Liang P., Neuropsychopharmacological effects of midazolam on the human brain. Brain Inform. 2020 Nov 10;7(1):15) (describing midazolam as "a widely used intravenous anesthetic agent . . . used to produce preoperative sedation and the induction of general anesthesia")).)

RESPONSE:

32. Midazolam is commonly used on its own as a sedative in minor medical procedures. (Ex. 9, Antognini Rep. at 8; Ex. 10, Van Norman Dep. 108:1-6.)

RESPONSE:

33. Midazolam is often used in conjunction with other drugs in surgical procedures in order to avoid giving high doses of any one particular drug, thereby reducing the side effects of each drug. (Ex. 13, Antognini Dep. 123:16-124:4.)

RESPONSE:

34. A typical therapeutic dose of midazolam for a 70-kilogram (150-155 pound) adult is between 2 and 3 milligrams. (Ex. 9, Antognini Rep. at 8.)

RESPONSE:

35. Midazolam can lower blood pressure and cause unconsciousness, respiratory depression, apnea, and death. (Ex. 9, Antognini Rep. at 8-9.)

RESPONSE:

36. Midazolam causes amnesia at very small doses of 1 to 2 milligrams. (Ex. 10, Van Norman Dep. 107: 20-21.)

RESPONSE:

37. Midazolam has a dose-dependent effect. (Ex. 14, Patel Rep. at 14 (citing Wang J, Sun P, Liang P., Neuropsychopharmacological effects of midazolam on the human brain. Brain Inform. 2020 Nov 10;7(1):15) ("[T]hese studies are consistent with the notion that cortical activity is sequentially impaired from higher-order brain cortices to primary cortical areas in a dose-dependent manner, by midazolam-induced sedation.").)

RESPONSE:

38. Intravenous administration of midazolam achieves peak effects within 2-3 minutes. (Ex. 9, Antognini Rep. at 9; Ex. 14, Patel Rep. at 7.)

RESPONSE:

39. Midazolam's package insert states that midazolam is indicated for induction of general anesthesia. (Ex. 9, Antognini Rep. at 9; Ex. 15, Van Norman Rep. at 7.)

RESPONSE:

40. The administration of Midazolam by itself has caused death. (Ex. 9, Antognini Rep. at 9-10.)

RESPONSE:

41. Midazolam is capable of producing unconsciousness without the assistance of other drugs. (Ex. 9, Antognini Rep. at 10, 18.)

RESPONSE:

42. A person administered midazolam in large, supra-clinical doses does not perceive pain. (Ex. 9, Antognini Rep. at 7.)

RESPONSE:

43. Midazolam's ability to produce unconsciousness and immobility in mice indicates that midazolam can act as a complete general anesthetic in humans, if administered in sufficient doses. (Ex. 9, Antognini Rep. at 10.)

RESPONSE:

44. Human testing of midazolam at doses high enough to produce immobility is not clinically warranted. (Ex. 9, Antognini Rep. at 10-11.)

RESPONSE:

45. Remimazolam, a benzodiazepine, has been shown to produce levels of unconsciousness sufficient to perform surgery (Ex. 9, Antognini Rep. at 11), and remimazolam behaves like any other benzodiazepine. (Ex. 13, Antognini Dep. 145:19-146:6.)

RESPONSE:

46. Midazolam renders patients unconscious to the stimulus of endotracheal intubation. (Ex. 9, Antognini Rep. at 11-12, 13-14, 18-19; Ex. 14, Patel Rep. at 7-8.)

RESPONSE:

47. Endotracheal intubation is a noxious stimulus, requiring more anesthetic than a surgical stimulation. (Ex. 13, Antognini Dep. 77:23-78:4.)

RESPONSE:

48. Midazolam renders patients unconscious to the stimulus of incision and dissection of their abdominal tissues. (Ex. 9, Antognini Rep. at 12-13.)

RESPONSE:

49. Midazolam reduces pain during painful medical procedures, such as cystoscopies, prostate biopsies, nasogastric tube placements, colonoscopies, and knee arthroscopies. (Ex. 9, Antognini Rep. at 14-15.)

RESPONSE:

50. Midazolam is used on its own during colonoscopies. (Ex. 15, Van Norman Rep. at 7.)

RESPONSE:

51. When compared to thiopental, propofol, and isoflurane—known complete anesthetics—midazolam is similarly effective at producing unconsciousness, blunting responses to noxious stimuli, and reducing awareness of pain. (Ex. 9, Antognini Rep. at 15-18.)

RESPONSE:

52. Administered to persons at doses of 0.3 to 0.4 mg/kg, midazolam produces unconsciousness, blunts responses to noxious stimuli, and reduces awareness of pain at least as effectively as thiopental, propofol, or isoflurane. (Ex. 9, Antognini Rep. at 18.)

RESPONSE:

53. Intravenous administration of 500 mg of midazolam is about 10-20 times the dose recommended to induce general anesthesia. (Ex. 9, Antognini Rep. at 19.)

RESPONSE:

54. Intravenous administration of 500 mg of midazolam is about 100-200 times the normal therapeutic dose. (Ex. 9, Antognini Rep. at 19.)

RESPONSE:

55. Intravenous administration of 500 mg of midazolam will produce a state of anesthesia comparable to levels of anesthesia considered adequate for painful medical procedures performed daily throughout the world. (Ex. 9, Antognini Rep. at 19-20.)

RESPONSE:

56. A person administered 500 mg of midazolam will be rendered completely unconscious and insensate to pain from the stimulus of administration of vecuronium bromide and potassium chloride. (Ex. 9, Antognini Rep. at 19, 26.)

RESPONSE:

57. A person administered 500 mg of midazolam will be rendered completely unconscious and insensate to pain from the stimulus of obstructed breathing. (Ex. 9, Antognini Rep. at 7, 19, 26.)

RESPONSE:

58. A person will be unconscious before administration of the entire 500 mg of midazolam is complete. (Ex. 9, Antognini Rep. at 20.)

RESPONSE:

59. There is only an exceedingly small risk that a person administered 500 mg of midazolam will experience any pain due to the administration of vecuronium bromide or potassium chloride. (Ex. 9, Antognini Rep. at 19-20.)

RESPONSE:

60. No study justifies the view that midazolam has a ceiling effect that will prevent it from rendering an inmate unconscious and insensate to any pain that might be caused by the drugs used in the Protocol. (Ex. 9, Antognini Rep. at 26.)

RESPONSE:

61. Most surgeries are performed when the brain is depressed but active, not in deep, coma-like unconsciousness. (Ex. 9, Antognini Rep. at 25.)

RESPONSE:

62. The high dose of midazolam required by the protocol ensures high concentration in the brain for a long period of time. (Ex. 9, Antognini Rep. at 26.)

RESPONSE:

63. Unlike some other anesthetics, midazolam is not painful on intravenous injection. (Ex. 9, Antognini Rep. at 23.)

RESPONSE:

64. Dr. Van Norman states consciousness cannot be monitored. (Ex. 9, Antognini Rep. at 30; Ex. 10, Van Norman Dep. 189:15-18.)

RESPONSE:

65. Dr. Van Norman opines that there is no possible method of determining if an individual is unconscious, and she cannot define unconsciousness. For Dr. Van Norman, whether a person is unconscious is "a philosophical question, because nobody has defined that point" and "there is no way [she] can tell" if her patients are unconscious. (Ex. 10, Van Norman Dep. 195:7-197:11, 213:5-14, 215:13-216:8.)

RESPONSE:

66. There is no monitor capable of showing whether a patient is aware during surgery. (Ex. 10, Van Norman Dep. 172: 10-14.)

RESPONSE:

67. Dr. Van Norman states that many, if not most, patients are aware during surgery while under general anesthesia. (Ex. 10, Van Norman Dep. 173:10-23.)

RESPONSE:

68. Dr. Van Norman does not agree that the drugs and methods used by anesthesiologists are effective for ensure that a patient undergoing surgery is unconscious and unable to feel pain. (Ex. 9, Antognini Rep. at 30.)

RESPONSE:

69. Dr. Van Norman is unable to identify any drug capable of consistently producing unconsciousness. (Ex. 10, Van Norman Dep. 214:17-19, 216:9-23, 219:2-13.)

RESPONSE:

70. Dr. Van Norman is unaware if she has rendered her own patients unconscious. (Ex. 10, Van Norman Dep. 214:9-19.)

RESPONSE:

71. Pulmonary edema is commonly found in deaths from a variety of causes. (Ex. 9, Antognini Rep. at 20; Ex. 16, Li Rep. at 2-3; Ex. 8, Williams Dep. 108:23-109:8.)

RESPONSE:

72. Pulmonary edema is a condition caused by excess fluid accumulation in the lungs. (Ex. 16, Li Rep. at 2-3.)

RESPONSE:

73. Accumulation of fluid in the air sacs of the lungs can be caused by the heart's failure to pump blood out of the lungs, backing the blood up into blood vessels in the lungs. (Ex. 16, Li Rep. at 2-3.)

RESPONSE:

74. Administration of midazolam according to the Protocol will produce unconsciousness before administration of the full 500 mg dose. (Ex. 9, Antognini Rep. at 20.)

RESPONSE:

75. A person administered 500 mg of midazolam would not be aware of pulmonary edema even if it occurs. (Ex. 9, Antognini Rep. at 20.)

RESPONSE:

76. Pulmonary edema is a very common finding in autopsies that identifies fluid buildup in the lungs. (Ex. 16, Li Rep. at 2-3.)

RESPONSE:

77. Pulmonary edema is not a specific finding of the administration of midazolam in the context of the Protocol. It may occur during the administration of the Protocol, but if it did, it would only occur at some point after midazolam had been administered. It could also occur after death, during the postmortem interval prior to the autopsy. (Ex. 16, Li Rep. at 3-4; Ex. 17, Li Dep. 169:1-170:9.)

RESPONSE:

78. Benzodiazepines, like midazolam, are used to relieve the anxiety produced by pulmonary edema. (Ex. 9, Antognini Rep. at 20; Ex. 16, Li Rep. at 4.)

RESPONSE:

79. Fluid accumulates in the lungs and airways during the postmortem period for a variety of causes of death. (Ex. 9, Antognini Rep. at 21; Ex. 16, Li Rep. at 3.)

RESPONSE:

80. Postmortem pulmonary edema may be explained by a pressure gradient between pulmonary vasculature and the alveolar spaces and an alteration of capillary permeability after death. (Ex. 16, Li Rep. at 3.)

RESPONSE:

81. The amount of fluid accumulated in the lungs and airways after death increases with time. (Ex. 9, Antognini Rep. at 21-22.)

RESPONSE:

82. Fluid accumulation in the lungs and airways that is found in scientific studies is similar to accumulation found during autopsies of inmates executed by lethal injection. (Ex. 9, Antognini Rep. at 21.)

RESPONSE:

83. Postmortem pulmonary edema is a generalized phenomenon and is not specific to drug overdose. (Ex. 9, Antognini Rep. at 22.)

RESPONSE:

84. Large portions of patients with pulmonary edema report no symptoms. (Ex. 9, Antognini Rep. at 22.)

RESPONSE:

85. Pulmonary edema does not necessarily lead to sensations of breathlessness. (Ex. 9, Antognini Rep. at 22.)

RESPONSE:

86. Frothy fluid has been found in humans and animals after death, and frothing can occur after death. (Ex. 9, Antognini Rep. at 22-23.)

RESPONSE:

87. Froth in a deceased's lungs does not necessarily indicate that the froth was generated by conscious attempts to breathe. (Ex. 9, Antognini Rep. at 23.)

RESPONSE:

88. Administration of 500 mg of midazolam according to the Protocol allows ample time for the midazolam and its carrier to mix with blood. (Ex. 9, Antognini Rep. at 23.)

RESPONSE:

89. Administration of 500 mg of midazolam according to the Protocol is unlikely to produce pulmonary edema via an "acid" effect – the buildup of acid in the blood – because the total amount of hydrogen ions in 500 mg of midazolam is limited, and there is ample time during the administration of midazolam according to the Protocol, over the course of 2 minutes, for the blood to buffer the small amount of hydrogen ions. (Ex. 9, Antognini Rep. at 23.)

RESPONSE:

90. Patients that undergo whole lung lavage, akin to profound pulmonary edema, do not experience pain. (Ex. 9, Antognini Rep. at 24.)

RESPONSE:

91. Whole lung lavage involves pouring 1 liter of saline into a lung, draining it 2 to 5 minutes later, and repeating the process so that as much as 50 liters of saline are poured into one lung over the course of several hours. (Ex. 9, Antognini Rep. at 24.)

RESPONSE:

92. Isoflurane and propofol can be used as anesthetics for whole lung lavage. (Ex. 9, Antognini Rep. at 24.)

RESPONSE:

93. There is no evidence that patients awaken during whole lung lavage. (Ex. 9, Antognini Rep. at 24.)

RESPONSE:

94. Movements of the chest and abdomen after administration of midazolam do not represent awareness. (Ex. 9, Antognini Rep. at 24-25.)

RESPONSE:

95. Midazolam can cause upper airway collapse. (Ex. 9, Antognini Rep. at 24.)

RESPONSE:

96. Upper airway collapse can cause snoring or a "rocking boat" breathing pattern. (Ex. 9, Antognini Rep. at 24-25.)

RESPONSE:

97. Anesthesiologists are familiar with unconscious patients exhibiting "rocking boat" breathing patterns. (Ex. 9, Antognini Rep. at 25.)

RESPONSE:

98. For a person administered 500 milligrams of midazolam according to the Protocol, intravenous infusion of potassium chloride would not wake the person. (Ex. 9, Antognini Rep. at 27.)

RESPONSE:

99. The record lacks evidence demonstrating that administration of potassium chloride to a person after administration of 500 mg of midazolam will result in the person awakening and perceiving pain. (Ex. 9, Antognini Rep. at 27.)

RESPONSE:

100. Midazolam will have an increasingly dose-dependent effect by increasing the inhibitory effect that GABA has when interacting with GABA receptors in the brain so long as GABA and GABA receptors are available. (Ex. 11, Stevens Rep. at 13-14; Ex. 12, Stevens Dep. 127:9-19, 127:24-128:3, 128:11-15.)

RESPONSE:

101. The brain contains an amino acid called gamma aminobutyric acid ("GABA") that functions as an inhibitory neurotransmitter when interacting with GABA receptors on a brain neuron. (Ex. 11, Stevens Rep. at 8-9, 13-14 & n.18; Ex. 14, Patel Rep. at 6-7.)

RESPONSE:

102. GABA can decrease or prevent activity in the central nervous system—the brain and spinal cord. (Ex. 11, Stevens Rep. at 8-9; Ex. 14, Patel Rep. at 6-7.)

RESPONSE:

103. There is no known measurement of the amount of GABA in the brain or spinal cord. (Ex. 12, Stevens Dep. 126:12-21.)

RESPONSE:

104. There is no known measurement of the number of GABA receptors in the brain. (Ex. 12, Stevens Dep. 128:4-10.)

RESPONSE:

105. There is no known dose at which midazolam reaches a ceiling effect. (Ex. 12, Stevens Dep. 162:10-12.)

RESPONSE:

106. Dr. Stevens has previously opined that midazolam reaches a ceiling effect at a dose of around 280 milligrams, but he now rejects that opinion. (Ex. 12, Stevens Dep. 162:13-163:18.)

RESPONSE:

B. Use and Efficacy of Vecuronium Bromide

107. The purpose of the vecuronium bromide is to aid in putting the inmate to death by paralyzing the inmate and thereby stopping the inmate's breathing, hastening death. (Ex. 4, TDOC 30(b)(6) Dep. 193:15-22.)

RESPONSE:

108. TDOC has the legitimate concern that removing the paralytic would remove a component of the Protocol that hastens death. (Ex. 4, TDOC 30(b)(6) Dep. 99:23-100:2.)

RESPONSE:

109. Vecuronium bromide is a muscle relaxant that blocks signals from the nerves to the muscles, resulting in paralysis of muscles throughout the body, including the diaphragm. (Ex. 13, Antognini Dep. 87:1-8; Ex. 9, Antognini Rep. at 27; Ex. 14, Patel Rep. at 9; Ex. 11, Stevens Rep. at 12, 15-16; Ex. 12, Stevens Dep. 167:15-168:1; Ex. 15, Van Norman Rep. at 24-27.)

RESPONSE:

110. Paralysis of the diaphragm stops breathing and results in the build-up of carbon dioxide. (Ex. 9, Antognini Rep. at 27; Ex. 14, Patel Rep. at 9.)

RESPONSE:

111. Vecuronium could kill an inmate before administration of potassium chloride under the Protocol. (Ex. 9, Antognini Rep. at 32; Ex. 13, Antognini Dep. 92:22-93:24, 108:4-109:16, 112:11-113:8; *see also* Ex. 11, Stevens Rep. at 16 (noting that vecuronium bromide causes paralysis and patients who receive it have needed artificial ventilation); Ex. 12, Stevens Dep. 168:7-19, 170:2-8 (noting that vecuronium bromide can stop respiration in three to four minutes and ultimately cause death); Ex. 10, Van Norman Dep. 52:13-25, 53:5-23, 54:19-24, 181:17-185:18 (noting that the "maximal clinical effect" of vecuronium bromide occurs between sixty seconds and two-and-a-half minutes depending on the dosage and, if untreated, can ultimately cause death).)

RESPONSE:

112. Paralytics like vecuronium are associated with movement immediately after injection, but there is no evidence that the person is also conscious. (Ex. 9, Antognini Rep. at 28.)

RESPONSE:

113. Vecuronium bromide is used to provide full skeletal muscle relaxation during surgery, endotracheal intubation, and to provide skeletal muscle relaxation while a patient is on a ventilator. (Ex. 14, Patel Rep. at 9.)

RESPONSE:

114. Vecuronium bromide will paralyze muscle, including the diaphragm, the muscle of breathing, which will stop breathing and result in the build-up of carbon dioxide. However, this increased amount of carbon dioxide is not sufficient to awaken anesthetized patients. (Ex. 9, Antognini Rep. at 27.)

RESPONSE:

C. Use and Efficacy of Potassium Chloride

115. The purpose of potassium chloride in the Protocol is to cause death by stopping the heart. (Ex. 4, TDOC 30(b)(6) Dep. 193:15-25.)

RESPONSE:

116. Potassium chloride is an electrolyte solution that, in high doses, blocks heart muscle contraction. (Ex. 11, Stevens Rep. at 17.)

RESPONSE:

117. Administration of potassium chloride according to the Protocol will result in cardiac arrest and quick death. (Ex. 11, Stevens Rep. at 17; Ex. 12, Stevens Dep. 170:9-171:8; Ex. 13, Antognini Dep. 102:17-103:22; Ex. 10, Van Norman Dep. 85: 22-25.)

RESPONSE:

118. If administered without a sedative or anesthetic, potassium chloride causes pain. (Ex. 9, Antognini Rep. 4, 32; Ex. 11, Stevens Rep. 16-17.)

RESPONSE:

III. Safeguards in the Protocol

119. The Protocol is intended to ensure that lethal injection executions are carried out in compliance with constitutional requirements. (Ex. 4, TDOC 30(b)(6) Dep. 54:1-7, 79:14-22.)

RESPONSE:

120. The Protocol includes safeguards to ensure and verify the drugs are administered correctly. (*See, e.g.*, Ex. 6, Protocol at 44-45.)

RESPONSE:

A. Confirmation of an Inmate's Unconsciousness

121. The Protocol requires that after the 500 mgs of midazolam and a saline flush have been dispensed, the Warden waits for two minutes and then assesses the consciousness of the inmate by brushing the back of his hand over the inmate's eyelashes, calling the inmate's name loudly two times, and grabbing the trapezius muscle of the shoulder with the thumb and two fingers and twisting. (Ex. 6, Protocol at 66.)

RESPONSE:

122. The Protocol requires that the consciousness check and the results of the consciousness check are documented. (Ex. 6, Protocol at 66.)

RESPONSE:

123. The Protocol requires that the Warden direct the Executioner to administer the second and third LIC only after the inmate's unresponsiveness demonstrates the inmate is unconscious. (Ex. 6, Protocol at 66.)

RESPONSE:

124. The Warden performs the consciousness check as described in the Protocol, as was documented during the executions of both Billy Ray Irick and Donnie Edward Johnson. (Ex. 18, Death Watch and Protocol Logs of Irick at 64; Ex. 19, Death Watch and Protocol Logs of Johnson at 19; Ex. 20, Mays Dep. 80:7-11.)

RESPONSE:

125. The Warden has been trained by a physician on how to perform a consciousness check. (Ex. 4, TDOC 30(b)(6) Dep.; Ex. 20, Mays Dep. 80:12-20.)

RESPONSE:

126. Lethal injection procedures do not require the participation of a physician or anyone who is medically trained. (Ex. 10, Van Norman Dep. 69:3-8.)

RESPONSE:

127. Non-physicians are capable of being trained to determine levels of consciousness. (Ex. 9, Antognini Rep. at 28; Ex. 13, Antognini Dep. 18:5-13.)

RESPONSE:

128. Lay people are taught to evaluate unconsciousness in basic first aid and cardiopulmonary resuscitation courses. (Ex. 9, Antognini Rep. at 28.)

RESPONSE:

129. Many anesthesiologists perform either no consciousness check or only a verbal consciousness check after induction and before intubation. (Ex. 9, Antognini Rep. at 29.)

RESPONSE:

130. Many anesthesiologists do not perform a consciousness check after administering an induction drug and before administering a neuromuscular blocking agent. (Ex. 9, Antognini Rep. at 29.)

RESPONSE:

131. The consciousness checks described in the Protocol are commonly used in clinical settings. (Ex. 9, Antognini Rep. at 32.)

RESPONSE:

132. Unresponsiveness to external stimuli indicates unconsciousness and an inability to feel pain. (Ex. 21, Blanke Dep. 73:12-25; Ex. 13, Antognini Dep. 74:13-75:19.)

RESPONSE:

133. Dr. Blanke, one of Plaintiff's experts, does not perform any consciousness checks after he administers an oral euthanasia cocktail to a patient, and in the past when he did perform a consciousness check, he used pinches or a sternal rub. (Ex. 21, Blanke Dep. 71:15-24, 72:11-73:11.)

RESPONSE:

B. Qualifications, Selection, and Training of the Execution Team

134. The Protocol defines the Execution Team as consisting of the Warden, the Associate Warden of Security, Executioner, IV Team, Extraction Team, Death Watch Team, Lethal Injection Recorder, Facility Maintenance Supervisor, ITS Security Systems Technician(s), and Escort Officers. (Ex. 6, Protocol at 32.)

RESPONSE:

135. The Protocol specifies criteria for the Warden to consider in selecting the other members of the Execution Team, including length of service; ability to maintain confidentiality; maturity; willingness to participate; satisfactory work performance; professionalism; staff recommendations to the Warden, and the Warden's review of personnel files. (Ex. 6, Protocol at 31.)

RESPONSE:

136. In selecting members of the Execution Team, Warden Mays considers the criteria from the Protocol, a background check, and anything else he personally perceives as disqualifying. (Ex. 20, Mays Dep. 96:6-11, 96:17-97:8.)

RESPONSE:

137. The Protocol requires multiple forms of regular, documented training sessions for members of the Execution Team. (Ex. 6, Protocol at 32.)

RESPONSE:

138. The Protocol's training requirements include:

a. that each team member read a copy of the protocol upon becoming a member of the Execution Team (Ex. 6, Protocol at 32);

b. that the Warden or designee to hold a class at least annually during which all members of the Execution Team review the protocol (Ex. 6, Protocol at 32);

c. that the Warden and Associate Warden of Security test all lethal injection equipment at a training session at least once a month, including a simulated execution with IV lines and IV drip (Ex. 6, Protocol at 51); and

d. that the Execution Team simulates the execution day every month. (Ex. 6, Protocol at 32.)

RESPONSE:

139. Each person who joins the Execution Team is required to read the Protocol before being permitted to attend any practice sessions. (Ex. 20, Mays Dep. 130:18-22; Ex. 22, Lewis Dep. 82:18-21.)

RESPONSE:

140. Each member of the Execution Team who gave a deposition testified they have read the Protocol. (Ex. 23, EMT 1 Dep. 11:1-18; Ex. 24, EMT 2 Dep. 43:9-19; Ex. 25, EMT 3 Dep. 36:19-25; Ex. 1, Executioner Dep. 36:24-25, 45:20-46:4; Ex. 26, IV Team Member 1 Dep. 16:21-17:24; Ex. 27, IV Team Member 2 Dep. 13:18-14:4; Ex. 28, IV Team Member 3 Dep. 23:20-24:6; Ex. 22, Lewis Dep. 29:5-21; Ex. 20, Mays Dep. 49:13-19.)

RESPONSE:

141. The Warden holds an annual, hours-long class during which he reads the entire Protocol aloud to all members of the Execution Team, and the Execution Team has the opportunity to ask questions. (Ex. 22, Lewis Dep. 82:17-83:24; Ex. 20, Mays Dep. 132:2-23.)

RESPONSE:

142. Warden Mays and his Associate Warden of Security test all lethal injection equipment at a training session at least once a month, including a simulated execution day with real IV lines inserted into a live participant, and a real IV drip. (Ex. 6, Protocol at 51; Ex. 20, Mays Dep. 220:2-14; Ex. 22, Lewis Dep. 86:12-18; Ex. 1, Executioner Dep. 90:2-5, 91:19-25.)

RESPONSE:

143. The Protocol requires additional training for the Execution Team two weeks before a scheduled execution. (Ex. 6, Protocol at 32.)

RESPONSE:

144. Additional training for the Execution Team is done two weeks before any scheduled execution. (Ex. 1, Executioner Dep. 85:6-18, 143:5-7.)

RESPONSE:

145. The Protocol requires that a week before a scheduled execution, the Execution Team's Officer in Charge and Assistant Officer assemble the Execution Team in the Execution

Chamber area to prepare and test all appliances and equipment for the scheduled execution. (Ex. 6, Protocol at 51.)

RESPONSE:

146. A week before a scheduled execution, the Execution Team tests all the appliances and equipment for the scheduled execution. (Ex. 1, Executioner Dep. 215:15-216:24.)

RESPONSE:

147. The Protocol requires that the Execution Team include three Certified Emergency Medical Technicians, and three correctional staff who have received IV training through the Tennessee Correction Academy by qualified medical professionals. (Ex 1, Protocol at 31.)

RESPONSE:

148. RMSI Warden Tony Mays has overseen all lethal injection practices except two since becoming Warden in 2017, and has never observed a deviation from the Protocol during these practice sessions. (Ex. 20, Mays Dep. 19:19-20; 57:19-25; 45:4-11.)

RESPONSE:

149. Warden Mays has overseen two executions using the current Protocol: the executions of Billy Ray Irick in 2018 and of Donnie Edward Johnson in 2019. (Ex. 20, Mays Dep. 269:21-24, 262:20-23.)

RESPONSE:

150. Warden Mays has not observed any deviation from the Protocol during an actual execution. (Ex. 20, Mays Dep. 45:12-46:14.)

RESPONSE:

151. A pharmacist could not administer lethal injection chemicals. (Ex. 29, Almgren Dep. 142:8-14.)

RESPONSE:

152. A layperson can be trained to handle and administer compounded sterile preparations. (Ex. 29, Almgren Dep. 142:19-143:5, 151:6-12.)

RESPONSE:

153. The Protocol requires the Executioner receive initial and periodic instruction from a qualified medical professional. (Ex. 6, Protocol at 32.)

RESPONSE:

154. The Executioner has received IV training through the Tennessee Correction Academy by qualified medical professionals, administered through a college. (Ex. 1, Executioner Dep. 71:4-74:14.)

RESPONSE:

155. The Executioner and members of the IV team annually receive training from a certified EMT instructor, who administers training on IV therapy material, how to find a vein if there is a problem doing so, and what to look for to know if there is a "blown vein." (Ex. 1, Executioner Dep. 29:7-30:7, 100:15-101:9, 102:18-21; Ex. 27, IV Team Member 2 Dep. 178:16-179:14.)

RESPONSE:

156. The Executioner has been involved in thirteen prior executions, all of which took place at Riverbend Maximum Security Prison — one in which the Executioner held the role of recorder assistant, and twelve performing the role of Executioner. (Ex. 1, Executioner Dep. 26:17-27:16.)

RESPONSE:

157. The current Executioner was the Executioner in the two administrations of the current Protocol: the executions of Billy Ray Irick and of Donnie Edward Johnson. (Ex. 1, Executioner Dep. 28:2-4, 249:17-24.)

RESPONSE:

C. IV Procedures

158. The Protocol's safeguards for the establishment and maintenance of IV sites include the following:

a. the requirement for training of the IV Team members through the Tennessee Correction Academy by qualified medical professionals (Ex. 6, Protocol at 31);

b. detailed instructions for setting up the IV line and a backup IV line before IV access is established (Ex. 6, Protocol at 41);

c. instructions that the inmate's arms and hands be secured to the gurney (Ex. 6, Protocol at 42, 44);

d. detailed, multi-step instructions as to how the EMT(s) are to insert the catheters into the vein, know that a catheter is inside a vein, and connect the catheter to one of the IV lines (Ex. 6, Protocol at 42-43);

e. instructions regarding the considerations (size, location, and resilience of veins) which affect their desirability for infusion purposes (Ex. 6, Protocol at 42);

f. instructions specifying the first IV site to be used, the antecubital fossa area (Ex. 6, Protocol at 42);

g. instructions specifying alternative IV sites to be tried in the event that a catheter cannot be successfully inserted into the first IV site, and the order in which to try them (Ex. 6, Protocol at 42);

h. a provision of discretionary authority for the physician to perform a cut-down procedure which would bare a vein for an IV line, as a last resort in the unlikely event that none of the alternative IV sites are usable (Ex. 6, Protocol at 19, 42, 69);

i. detailed instructions for members of the IV team to observe the IV for indication of a well-functioning line, specifying the indicators (a steady flow/drip inside the drip chamber upon opening of the clamp, and that the flash chamber becomes clear of blood as the Sodium Chloride begins to flow) and providing that the IV Team be confident that there is a well-functioning line and signal the same (Ex. 6, Protocol at 42);

j. placement of a transparent dressing over the catheters before securing the line with tape (Ex. 6, Protocol at 42);

k. instructions for continuous monitoring of the IV catheters by all members of the IV team to ensure there is no swelling around the catheter that could indicate that the catheter is not sufficiently inside the vein (including a dedicated IV team member who continually monitors the catheter sites for swelling or discoloration after placement) (Ex. 6, Protocol at 44); and

l. instructions that, when the Execution administers the first syringe of LIC, if there is swelling around the catheter or if there is resistance to the pressure, the Executioner pulls the plunger back to check and see if the line fills with blood (indicating a properly placed catheter) and that if it does not, the Executioner discontinues and switches to the backup syringes on the backup IV line (Ex. 6, Protocol at 45).

RESPONSE:

159. All three members of the IV Team have received IV training from qualified medical professionals. (Ex. 26, IV Team Member 1 Dep. 15:15-16:2, 26:14-27:22; Ex. 27, IV Team Member 2 Dep. 18:20-19:14; Ex. 28, IV Team Member 3 Dep. 33:24-35:2; Ex. 4, TDOC 30(b)(6) Dep. 211:14-20.)

RESPONSE:

160. The Executioner carries out the Protocol's instructions for setting up the IV line and a backup IV line before IV access is established. (Ex. 1, Executioner Dep. 179:3-17.)

RESPONSE:

161. A certified EMT has inserted the IV catheters during every execution the State has performed via lethal injection. (Ex. 1, Executioner Dep. 33:23-34:1.)

RESPONSE:

162. All three EMTs on the Execution Team are licensed paramedics with approximately 30 years of combined experience, whose licenses have never lapsed. (Ex. 23, EMT 1 Dep. 15:17-16:9, 24:22-25; Ex. 24, EMT 2 Dep. 18:23-25, 19:1-8; Ex. 25, EMT 3 Dep. 12:12-13:23.)

RESPONSE:

163. All three EMTs are usually successful in starting an IV on the first attempt. (Ex. 23, EMT 1 Dep. 63:24-25; Ex. 24, EMT 2 Dep. 29:11-21; Ex. 25, EMT 3 Dep. 21:7-10.)

RESPONSE:

164. Both EMT 1, who has participated in every lethal injection execution in Tennessee since 2000, and EMT 2, who has participated in two executions, typically do not need multiple attempts to insert an IV catheter into the antecubital area during an execution. (Ex. 23, EMT 1 Dep. 36:11-13, 66:12-15; Ex. 24, EMT 2 Dep. 38:14-16, 71:8, 73:14, 74:2-5.)

RESPONSE:

165. EMT 3, who had been on the Execution Team for three months as of EMT 3's October 2021 deposition, generally takes one attempt to start an IV line, and only required two attempts to complete a successful IV line during one out of the three monthly training sessions EMT 3 had attended. (Ex. 25, EMT 3 Dep. 21:7-10, 24:6-10, 29:5-18.)

RESPONSE:

166. It has never been necessary for a physician to perform a cut down procedure in an execution. (Ex. 1, Executioner Dep. 192:16-24.)

RESPONSE:

167. The EMTs have never needed to utilize alternate locations for veinous access, although, they practice accessing the alternative locations during training sessions. (Ex. 1, Executioner Dep. 210:12-211:15.)

RESPONSE:

168. All members of the IV team do continuously monitor the injection site during executions. (Ex. 1, Executioner Dep. 203:18-22; Ex. 26, IV Team Member 1 Dep. 45:25-46:17, 112:1-4; Ex. 27, IV Team Member 2 Dep. 139:23-140:5; Ex. 28, IV Team Member 3 Dep. 77:14-78:2.)

RESPONSE:

169. The Executioner follows the Protocol's directions if there appears to be swelling around the catheter. (Ex. 1, Executioner Dep. 203:10-204:25.)

RESPONSE:

170. The Executioner has never switched to the backup line in previous executions. (Ex. 1, Executioner Dep. 205.10-14.)

RESPONSE:

D. Physical Restraints

171. The Protocol requires that restraints be placed on the inmate's arms to secure them to the gurney and that that an IV team member tape both the inmate's hands, palms up, to the arm support of the gurney. (Ex. 6, Protocol at 42, 44.)

RESPONSE:

172. The function of both the restraints of the inmate's arms and of the inmate's hands is to help prevent movement of the arms and the extremities where the IVs are attached. (Ex. 30, Parker Dep. Vol. 1 141:21-142:4.)

RESPONSE:

173. The arm restraints also serve to keep the offender secured on the gurney. (Ex. 6, Protocol at 14; Ex. 22, Lewis Dep. 56:6-9.)

RESPONSE:

174. The taping of the hands also provides additional support and stabilization and prevents the inmate from making any type of hand gestures or making movements that would interfere with access to the arm or with the IV line. (Ex. 22, Lewis Dep. 147:18-148:1; Ex. 2, Inglis Dep. 205:21-206:5; Ex. 1, Executioner Dep. 196:16-197:6.)

RESPONSE:

175. In accordance with the Protocol's requirements, the Associate Warden of Security checks the inmate's restraints before the IVs are placed, in order to make sure they are neither too tight nor too lose. (Ex. 6, Protocol at 14; Ex. 22, Lewis Dep. 55:9-56:9.)

RESPONSE:

E. Contingency Plans

176. The Protocol contains provisions for contingencies including the following:

a. difficulties gaining IV access (in which case the Protocol provides that the Physician use a cut-down procedure or chooses a different method) (Ex. 6, Protocol at 69);

b. interruptions of delivery of the LIC in the primary IV line, or if the inmate exhibits signs of consciousness following administration of first syringes containing midazolam (in which case the Protocol provides for the Executioner to switch to the secondary IV line and begin administration of the second set of LIC syringes, and a second consciousness check performed by the Warden) (Ex. 6, Protocol at 69); and

c. if an inmate is not deceased after the initial set of syringes has been injected (in which case the Protocol provides that the lethal injection procedure be repeated with the second set of syringes and the Physician is asked again to check for signs of life) (Ex. 6, Protocol at 69).

RESPONSE:

177. The monthly practice sessions performed by the Execution Team include simulation of emergencies and contingencies, including the inmate refusing to willingly leave the cell; the inmate losing consciousness en route to the execution chamber; difficulties gaining IV access; interruptions of delivery of the LIC in the primary IV line; a failed consciousness check; and the inmate not being deceased after injection with the initial set of syringes. (Ex. 20, Mays Dep. 140:5-23; 247:19-248:11.)

RESPONSE:

178. The execution team has simulated in training the use of alternative IV insertion sites listed in the protocol (the forearm, wrist, back of the hand, top of the foot, and ankle). (Ex. 22, Lewis Dep. 137:9-138:17; Ex. 1, Executioner Dep. 90:10-91:18; 211:3-15.)

RESPONSE:

F. Record of Success in Previous Executions

179. On May 16, 2019, Tennessee executed inmate Donnie Edward Johnson via lethal injection using the current Protocol. (Ex. 31, Autopsy Report of Donnie Johnson at 6.)

RESPONSE:

180. The administration of the Protocol resulted in Johnson's timely death without complication or incident, and the Chemical Preparation Time Sheet for Johnson's execution reflects the witnessed preparation of both a red set of syringes and a blue set, complete with 2 syringes of midazolam. (*See* Ex. 19, Death watch and Protocol logs of Johnson (logs for date of execution, noting all events leading up to and including Johnson's timely death without any noted complication or incident); Ex. 30, Parker Dep. Vol. 1 142:5-25, Ex. 20, Mays Dep. 264:5-264:25; Ex. 22, Lewis Dep. 198:1-200:8; Ex. 1, Executioner Dep. 249:17-24, 262:12-18; Ex. 27, IV Team Member 2 Dep. 66:5-67:25; Ex. 28, IV Team Member 3 Dep. 83:23-25, 86:1-89:5; Ex. 23, EMT 1 Dep. 87:23-88:2, 88:25-89:25; Ex. 41, 5/16/19 Chemical Preparation Time Sheet, Def. Int. Discl. 000831-32 (reflecting preparation of second dose of midazolam).)

RESPONSE:

181. On August 9, 2018, Tennessee executed inmate Billy Ray Irick via lethal injection using the current Protocol. (Ex. 32, Autopsy Report of Billy Ray Irick at 1.)

RESPONSE:

182. The administration of the Protocol resulted in Irick's timely death without complication or incident. *See* Ex. 18, Death Watch and Protocol Logs of Irick (logs for date of

execution, noting all events leading up to and including Irick's timely death without any noted complication or incident); Ex. 30, Parker Dep. Vol. 1 123:23-125:24; Ex. 20, Mays Dep. 270:18-271:16, 275:1-24, 276:20-279:7; Ex. 22, Lewis Dep. 203:11-206:14; Ex. 1, Executioner Dep. 263:11-15, 265:13-267:5, 268:8-274:16; Ex. 27, IV Team Member 2 Dep. 81:6-9, 82:13-15, 87:15-88:5; Ex. 28, IV Team Member 3 Dep. 59:24-64:24, 75:8-15, 76:13-15, 78:22-7981:11; Ex. 23, EMT 1 Dep. 93:18-94:12, Ex. 24, EMT 2 Dep. 94:7-21, 96:2-97:10, 98:6-99:7, 100:3-103:14.)

RESPONSE:

183. Plaintiff has no unique physical physiological characteristics relevant to his claims challenging the constitutionality of the Lethal Injection Protocol in this case. (Ex. 7, Plf.'s Responses to First Set of Req. for Adm. at 2-3 (asserting that Plaintiff has raised no Eighth Amendment as-applied claim based upon his unique physical physiological characteristics)).

RESPONSE:

184. Damon Lawrence from the Roane County News attended Billy Ray Irick's execution as a media witness, as authorized by state law. (Ex. 33, Lawrence Selection Letter.)

RESPONSE:

185. According to Mr. Lawrence, Billy Ray Irick did not display any signs he was in pain. (Ex. 34, Lawrence Dec.)

RESPONSE:

186. According to Mr. Lawrence, Billy Ray Irick in no way indicated he was uncomfortable before or during the execution. (Ex. 34, Lawrence Dec.)

RESPONSE:

187. Mr. Lawrence summarized the execution this way: "Mr. Irick went to sleep and never woke up." (Ex. 34, Lawrence Dec.)

RESPONSE:

188. According to Mr. Lawrence, all the prison staff at Billy Ray Irick's execution "were professional and seemed to know what they were doing." (Ex. 34, Lawrence Dec.)

RESPONSE:

G. Preparation, Transportation, and Storage of Lethal Injection Chemicals

189. The Protocol sets forth numerous specific requirements for the procurement, storage, accountability, and transfer of the LIC. (Ex. 6, Protocol at 35-38.)

RESPONSE:

190. The Protocol requires that the LIC must either be FDA-approved commercially manufactured drugs, or compounded preparations prepared in compliance with pharmaceutical standards consistent with the United States Pharmacopeia guidelines and accreditation Departments and in accordance with applicable licensing regulations. (Ex. 6, Protocol at 34.)

RESPONSE:

191. Currently, TDOC uses compounded midazolam, commercially manufactured vecuronium bromide, and compounded potassium chloride. (Ex. 3, Drug Procurer Dep. 43:11-44:6.)

RESPONSE:

192. For commercially manufactured LIC, the Protocol requires that upon direction from the Commissioner or Commissioner's designee, a member of the Execution Team checks the supply of LIC and expiration dates. (Ex. 6, Protocol at 37.)

RESPONSE:

193. If it is determined that additional LIC are needed, the Protocol requires that the following procedures be followed:

a. the member contacts the Procurement Officer at RMSI (Ex. 6, Protocol at 37);

b. the RMSI Procurement Officer then contacts the Procurement Officer at DeBerry Special Needs Facility ("DSNF") (hereinafter, "Drug Procurer") to order the needed chemical(s) (Ex. 6, Protocol at 37);

c. when the chemical(s) are delivered, the Drug Procurer contacts the Procurement Officer at RMSI, and one of the members of the Execution Team picks up the chemicals at either the DSNF or RMSI warehouse (Ex. 6, Protocol at 37); and

d. a member of the Execution Team checks the supply, concentration, and expiration dates on the chemicals. (Ex. 6, Protocol at 37.)

RESPONSE:

194. The Drug Procurer receives commercially manufactured LIC, and along with the Warden, checks the supply, concentration, and expiration dates on the LIC. (Ex. 3, Drug Procurer Dep. 145:25-146:17.)

RESPONSE:

195. The Executioner is typically present when the LIC are received, and the Executioner checks the expiration date of the LIC when they are placed into storage. (Ex. 1, Executioner Dep. 119:12-16, 128:3-129:5.)

RESPONSE:

196. The commercially manufactured vecuronium bromide is provided to Defendants by a source that only uses FDA-approved suppliers. (Ex. 3, Drug Procurer Dep. 76:22-77:17.)

RESPONSE:

197. The commercially manufactured vecuronium bromide is wrapped in bubble wrap and sent in a box. (Ex. 35, Pharmacist Dep. 178:13-20.)

RESPONSE:

198. For compounded LIC, the Protocol requires that upon receipt of an order setting an execution date, the Commissioner or Commissioner's designee (the Drug Procurer) first contacts a physician to obtain a physician's order for the LIC. (Ex. 6, Protocol at 35.) The Drug Procurer follows this procedure. (Ex. 3, Drug Procurer Dep., 83:16-4.). Per the requirements of the Protocol, the Commissioner or Drug Procurer then submits the order to a licensed pharmacy or pharmacist to be filled. (*Id.*; Ex. 3, Drug Procurer Dep., 84:10-11.)

RESPONSE:

199. The Protocol requires the compounding pharmacist ("Pharmacist") to compound all drugs in a clean sterile environment in compliance with pharmaceutical standards for identity, strength, quality, and purity of the compounded drug that are consistent with United States Pharmacopoeia ("USP") guidelines and accreditation Departments and in accordance with applicable licensing regulations. (Ex. 6, Protocol at 35.)

RESPONSE:

200. The Pharmacy is licensed for sterile compounding. (Ex. 3, Drug Procurer Dep., 72:13; Ex. 36, Redacted Tennessee Pharmacy license.)

RESPONSE:

201. The current compounding Pharmacist is certified for sterile compounding. (Ex. 35, Pharmacist Dep. 16:16-18, 17:8-14.)

RESPONSE:

202. The compounding Pharmacist, with assistance from a pharmacy technician who physically handles the pharmaceutical ingredients, compounds the midazolam and potassium chloride in a clean sterile environment consistent with USP guidelines. (Ex. 35, Pharmacist Dep. 139:14-142:7, 146:11-25, 147:25, 150:2-10.)

RESPONSE:

203. The compounded drugs are subject to the Pharmacist's visual inspection, both throughout the process and at the end of the process after being placed into a vial. (Ex. 35, Pharmacist Dep. 158:21-159:15.) The Pharmacist's final visual inspection checks the integrity of the vial, ensure that there are no particulates in the liquid inside, and placing the vial in front of a contrasting color to aid these checks. (Ex. 35, Pharmacist Dep. 159:12-160:16.)

RESPONSE:

204. When the Pharmacist compounds drugs, the compounding process is documented in logs. (Ex. 35, Pharmacist Dep. 148:18-25.)

RESPONSE:

205. The pharmacy technician assisting the Pharmacist fills out the logs as the technician adds each ingredient during the compounding process, and the Pharmacist checks that log. (Ex. 35, Pharmacist Dep. 148:25-149:3.)

RESPONSE:

206. After the pharmacy technician is finished adding ingredients to the drugs being compounded, the technician places the compounded preparation in sterile vials, using a syringe with a 0.2-micron filter to sterilize the preparation while it is being added to the sterile vial. (Ex. 35, Pharmacist Dep. 150:17-151:7.)

RESPONSE:

207. After the pharmacy technician transfers the compounded preparation to sterile vials, in accordance with USP 797, a "beyond use date" ("BUD") is printed on the vial, after which the medication is not dispensed or transported for use. (Ex. 35, Pharmacist Dep. 151:13-24, 152:7-15.)

RESPONSE:

208. The Pharmacy prints other information on the vials including the name of the drug, the concentration, volume, directions on intended use, patent's name, prescription number, instructions for storage (whether to be kept room temperature, refrigerated, or frozen), and quantity in the vial. (Ex. 35, Pharmacist Dep. 154:2-22.)

RESPONSE:

209. The Pharmacy stores the vials of labelled, compounded LIC in a regular freezer, of the type that might be found in someone's home. (Ex. 35, Pharmacist Dep. 155:6-15.)

RESPONSE:

210. The Protocol further requires the compounding Pharmacist arranges for independent testing of the compounded preparations for potency, sterility, and endotoxins. (Ex. 6, Protocol at 35.)

RESPONSE:

211. The Compounding Pharmacist arranges for an independent third-party laboratory to test the compounded LIC for potency, sterility, and endotoxins. (Ex. 35, Pharmacist Dep. 160:18-11, 161:6-11, 163:24-164:3.)

RESPONSE:

212. The Pharmacy ships the compounded LIC to TDOC within 24 to 48 hours of receiving the results of the testing from the independent third party. The testing typically takes about seven days. (Ex. 35, Pharmacist Dep. 180:6-11, 182:23-183:3.)

RESPONSE:

213. The Protocol requires that compounded LIC be transferred, stored and maintained in accordance with the directions of the Pharmacy with which the Department has a Pharmacy

Services Agreement ("Pharmacy") and that these directions be in compliance with pharmaceutical standards and consistent with USP guidelines. (Ex. 6, Protocol at 35.)

RESPONSE:

214. The vials of compounded LIC come from the Pharmacy labeled with the name of the inmate for whom the vial is ordered. (Ex. 3, Drug Procurer Dep. 101:25-102:3.)

RESPONSE:

215. Upon receipt of a shipment of compounded LIC from the Pharmacy, the Drug Procurer's practice is to open the container and ensure no seal has been broken or been tampered with. (Ex. 3, Drug Procurer Dep. 87:11-15.)

RESPONSE:

216. The compounded LIC are shipped in dry ice, and the Drug Procurer's practice is to check when opening the container to ensure they are frozen. (Ex. 3, Drug Procurer Dep. 87:16-22.)

RESPONSE:

217. Upon receipt of either compounded or commercially manufactured LIC, the Protocol requires that a member of the Execution Team and the Warden take the LIC to the armory area of Building 7 at RMSI, where they are stored in the key control section of the armory. (Ex. 6, Protocol at 35, 37.)

RESPONSE:

218. Consistent with the Protocol's requirements, Warden Mays, a member of the Execution Team, and the Commissioner's designee (the Drug Procurer) all take the LIC into the armory building upon receipt. (Ex. 20, Mays Dep. 161:24-162:2; Ex. 3, Drug Procurer Dep. 84:1-2, 89:3-6.)

RESPONSE:

219. The Executioner is typically present when the compounded LIC is taken into the armory building upon receipt. (Ex. 1, Executioner Dep. 128:2-129:5.)

RESPONSE:

220. The LIC are stored in the key control section, rather than in the weapon area of the armory, because that location is where there is the least employee need for access. (Ex. 6, Protocol at 35, 37.)

RESPONSE:

221. Once in the key control section of the armory area of Building 7 at RMSI, the LIC are placed in appropriate storage containers. (Ex. 3, Drug Procurer Dep. 89:3-9, 47:7-9.)

RESPONSE:

222. The Protocol's instructions for both commercially manufactured and compounded LIC call for the LIC to be stored in unmovable heavy gauge steel containers with security grade locks. (Ex. 6, Protocol at 35, 37.)

RESPONSE:

223. Bacteriostatic water and commercially manufactured vecuronium bromide are stored in a secured cabinet at room temperature. (Ex. 3, Drug Procurer Dep. 42:15-24, 43:15-24 92:22-93:5.)

RESPONSE:

224. As to compounded LIC, the Protocol specifically directs that compounded LIC are to be transferred, stored and maintained in accordance with the directions of the Pharmacy. (Ex. 6, Protocol at 35.)

RESPONSE:

225. Compounded midazolam and compounded potassium chloride arrive from the pharmacy frozen. (Ex. 3, Drug Procurer Dep. 87:11-22.)

RESPONSE:

226. The Pharmacy has provided directions to TDOC for storage of the compounded midazolam. (Ex. 35, Pharmacist Dep. 186:18-1, 189:11-15, 202:22-25, 203:13-15; Ex. 37, Midazolam Storage and Preparation Instructions at 1-2.)

RESPONSE:

227. The compounded potassium chloride has the same storage requirements as the midazolam. (Ex. 35, Pharmacist Dep. 205:6-9.)

RESPONSE:

228. The directions of the Pharmacy regarding compounded midazolam specifically provide that the compounded midazolam has a BUD of 45 days frozen, 3 days refrigerated, and 24 hours at room temperature (after which it cannot be refrozen). (Ex. 37, Midazolam Storage and Preparation Instructions at 1.)

RESPONSE:

229. For purposes of the Pharmacy's directions regarding storage of the compounded LIC, the temperature range for the LIC to be frozen is from negative 25 to negative 10 degrees Celsius, and the temperature range for the LIC to be refrigerated is from 2 to 8 degrees Celsius. (Ex. 35, Pharmacist Dep. 190:14-23.)

RESPONSE:

230. The locked steel container discussed in the Protocol does not have the capability to keep the compounded LIC at the proper temperature, (Ex. 3, Drug Procurer Dep. 93:24-94:1), so to comply with the specific directions of the Pharmacy, TDOC stores compounded midazolam and

compounded potassium chloride in a freezer located in the key control section. (Ex. 3, Drug Procurer Dep., 43:15-16; 44:3-14; 94:11-22; Ex. 4, TDOC 30(b)(6) Dep. 252:11-261:16.)

RESPONSE:

231. The temperature of the freezer typically is between 1- and 4-degrees Fahrenheit. (Ex. 3, Drug Procurer Dep. 89:10-13.) A thermometer inside the freezer shows the temperature of the freezer. (*Id.* at 22-23.) A backup generator supplies power to the freezer in the event that the building or the room containing the freezer loses power. (*Id.* at 90:1-3.)

RESPONSE:

232. When transferring a shipment of frozen LIC from the shipping container to the freezer, the Drug Procurer ensures that the temperature of the freezer will maintain the compounded LIC in a frozen state. (Ex. 3, Drug Procurer Dep. 87:17-20.) The Drug Procurer then places the LIC in the freezer and logs the temperature of the freezer and the inventory in the ledger, after which the freezer is closed, locked, and a seal put around the lock. (Ex. 3, Drug Procurer Dep. 87:22-25; 101:5-8.)

RESPONSE:

233. The Protocol contains safeguards to ensure the security, tracking, inventory, and (in the event of expiration) disposal of LIC as follows:

a. the Warden of RMSI is to have the only keys to access the storage container and freezer. (Ex. 6, Protocol at 35, 37.)

b. the Warden is to surrender the key(s) to no one other than the sole member of the Execution Team designated to inventory the LIC, and only for the duration of the count and expiration checking of the LIC. (Ex. 6, Protocol at 35, 37.)

RESPONSE:

234. The Warden of RMSI has the only keys to access the storage container and freezer, (Ex. 20, Mays Dep. 186:12-25), and he surrenders the key(s) to no one other than the sole member of the Execution Team designated to inventory the LIC, and only for the duration of the count and expiration checking of the LIC. (Ex. 20, Mays Dep. 186:12-25.)

RESPONSE:

235. The Protocol's safeguards to ensure the tracking and inventory of the LIC include the following:

a. a requirement that a permanently bound ledger be maintained in the armory/key control area where all employees sign each time they enter the area (Ex. 6, Protocol at 36, 38);

b. a requirement that the armory/key control officer performs a visual inspection of each container of LIC upon arrival at his workstation to ensure the proper band is in place and that the container has not been compromised in any way (Ex. 6, Protocol at 36, 38);

c. a requirement that a permanently bound ledger be maintained in the storage area that contains a record of the LIC ("Inventory Ledger") (Ex. 6, Protocol at 36, 38);

d. a requirement that any LIC received into the storage container is added to the Inventory Ledger, and that any LIC removed for use, disposal due to expiration, or for any other reason is deducted from the Inventory Ledger (Ex. 6, Protocol at 36, 38);

e. a requirement that the storage container for LIC has a numbered security band, the number of which is recorded in the Inventory Ledger (Ex. 6, Protocol at 36, 38);

f. a requirement that any time the storage container is opened for any reason, the band is broken, and the band number along with the justification for entry are recorded in the Inventory Ledger (Ex. 6, Protocol at 36, 38);

g. a requirement that a new band to be placed on the storage container when it is re-secured after opening, and that the new band number be recorded in the Inventory Ledger (Ex. 6, Protocol at 36, 38);

h. a requirement that upon receipt of the LIC, the Warden or designee secures the LIC in the armory storage area and adjusts the inventory appropriately (Ex. 6, Protocol at 36, 38);

i. a requirement that the Warden and designee jointly verify the inventory of LIC, at a minimum, on a semi-annual basis in January and July, and subsequent to each execution (Ex. 6, Protocol at 36, 38);

j. a requirement that the Warden and designee make appropriate entries in the ledger with their full signatures that verify the correctness of the LIC count, for each inventory (Ex. 6, Protocol at 36, 38);

k. a requirement that the LIC be signed out on the appropriate ledger in the armory for execution purposes and that the Warden's Designee be responsible for delivery of the LIC to the appropriate individuals in the Execution Chamber (Ex. 6, Protocol at 36, 38); and

l. a requirement that if the LIC is not used and is not comprised in any way, the LIC (whether commercially manufactured or compounded) be returned to the armory, re-entered on the Inventory Ledger, and secured in the refrigerator or appropriate container (Ex. 6, Protocol at 36, 38).

RESPONSE:

236. As to compounded LIC, the Drug Procurer is responsible for ensuring the LIC are stored and maintained in accordance with the directions of the Pharmacy. (Ex. 3, Drug Procurer Dep. 86:23-87:6.)

RESPONSE:

237. An Inventory Ledger containing a record of the LIC is maintained in the LIC storage area. (Ex. 3, Drug Procurer Dep. 45:11-13, 63:3-18.)

RESPONSE:

238. Upon receipt of the LIC, the Warden or designee (the Drug Procurer) adjusts the inventory on the Inventory Ledger accordingly, recording the name of the LIC, the lot number, expiration date, and freezer temperature. Whoever does not write down the information doublechecks the recorded information. (Ex. 3, Drug Procurer Dep. 45:19-46:24.)

RESPONSE:

239. Any LIC received into or removed from the storage containers — including for use in an execution — is recorded on the Inventory Ledger, and the numbers of the security bands which are maintained on the storage containers are separately logged. (Ex. 3, Drug Procurer Dep. 45:19-5, 47:16-17, 100:5-12.)

RESPONSE:

240. The Warden and designee jointly verify the inventory of LIC and make signed, appropriate entries in the Inventory Ledger to verify the correctness of the LIC count. (Ex. 20, Mays Dep. 188:20-189:3.)

RESPONSE:

241. Any compounded LIC that is not used for a specific execution is returned to the armory, re-entered on the Inventory Ledger, and secured in the refrigerator and ultimately disposed of. (Ex. 3, Drug Procurer Dep. 85:13-18, 106:13-24.)

RESPONSE:

242. Any commercially manufactured LIC that was removed from storage for an execution but not used for that execution, if it is not compromised, is returned to the armory, re-entered on the Inventory Ledger, and re-secured in the appropriate container. Such LIC can be used for a future execution. (Ex. 3, Drug Procurer Dep. 150:3-22.)

RESPONSE:

243. The Protocol's safeguards to ensure the disposal of expired LIC include the following:

a. a requirement that prior to placing the LIC in storage, the Warden or designee record the expiration date and lot number or other identifying marking of the LIC, to ensure the LIC is properly disposed of at the time of expiration (Ex. 6, Protocol at 36, 38);

b. The Protocol requires both commercially manufactured LIC and compounded LIC kept on hand with TDOC to be monitored for expiration dates (Ex. 6, Protocol at 35, 37);

c. The Protocol requires that all of the boxes and bottles for LIC have an expiration date, and all LIC are in tamper-proof bottles or containers (Ex. 6, Protocol at 35, 37); and

d. The Protocol requires that as the LIC reach their expiration dates, they are disposed of by hazardous waste pick-up. (Ex. 6, Protocol at 35, 37.)

RESPONSE:

244. The Warden and designee record the expiration date and lot numbers of the LIC prior to placing it in storage. (Ex. 20, Mays Dep. 187:1-14; Ex. 3, Drug Procurer Dep. 46:1-5.; *see, e.g.*, Ex. 38, Inventory Ledger at 1-15.)

RESPONSE:

245. The Warden and designee monitor all LIC for expiration dates. (Ex. 3, Drug Procurer Dep. 99:1-20; Ex. 20, Mays Dep. 185:5-13.)

RESPONSE:

246. Expired LIC is disposed of as medical waste. (Ex. 3, Drug Procurer Dep. 46:25-47:13.)

RESPONSE:

247. The directions from the Pharmacy direct that 4 vials of compounded midazolam be moved from the freezer to the refrigerator to thaw 24 hours prior to use. (Ex. 37, Midazolam Storage and Preparation Instructions at 1.)

RESPONSE:

248. The directions from the Pharmacy direct that 2 vials of potassium chloride be moved from the freezer to the refrigerator to thaw 24 hours prior to use. (Ex. 39, Potassium Chloride Preparation Instructions at 1-2.)

RESPONSE:

249. TDOC usually receives the compounded LIC approximately one to two weeks before an execution date, and stores the LIC in the freezer until moving them from the freezer to the refrigerator to thaw the day before an execution. (Ex. 3, Drug Procurer Dep. 90:6-10.)

RESPONSE:

250. There is a thermometer in both the freezer and the refrigerator, as well as an external temperature gauge on the refrigerator, and the Drug Procurer checks the thermometer in the freezer when the drugs are received and stored, and logs this temperature. When the drugs are moved to the refrigerator, the temperature is also checked and logged. (Ex. 3, Drug Procurer Dep. 89:20-23, 121:1-15.) (Ex. 40, Photograph of External Temperature Gauge, Def. 2nd Int. & RFP & RFA 000020.)

RESPONSE:

251. The objective of USP standards and guidelines is to prevent harm, including death, to patients in a healthcare setting. (Ex. 29, Almgren Dep. 128:15-22.)

RESPONSE:

252. Failure to follow USP 797 does not necessarily cause harm to a patient. (Ex. 29, Almgren Dep. 135:14-20, 212:12-223:16, 237:4-14.)

RESPONSE:

253. There is no identifiable harm to an inmate who receives an injection of vecuronium bromide drawn into a syringe two hours before administration of lethal injection chemicals. (Ex. 29, Almgren Dep. 158:12-163:5.)

RESPONSE:

254. There is no identifiable harm to an inmate who receives injections of lethal injection chemicals from an executioner who has not received advanced aseptic technique training. (Ex. 29, Almgren Dep. 164:25-169:7.)

RESPONSE:

255. The Protocol contains multiple safeguards for the proper preparation of the LIC on the day of execution. (Ex. 6, Protocol at 39.)

RESPONSE:

256. The Protocol requires that on the day of an execution, the LIC be signed out on the appropriate ledger in the armory and delivered by at least two members of the Execution Team directly to the Lethal Injection Room. (Ex. 6, Protocol at 36, 38, 39.)

RESPONSE:

257. The Protocol calls for preparation of two complete sets of LIC on the day of an execution. Each set consists of nine syringes each, containing the LIC and saline: a set color-coded red, and a back-up set color-coded blue. (Ex. 6, Protocol at 39.)

RESPONSE:

258. The Protocol requires that one member of the Execution Team draw the LIC into syringes, while another member of the Execution Team observes, documents the preparation of the LIC, and verifies that the procedure has been carried out correctly. (Ex. 6, Protocol at 39.)

RESPONSE:

259. On the day of an execution, Warden Mays and the Executioner transport the LIC to the execution area. The Executioner takes the drugs into the lethal injection executioner's room and prepares the red (primary) and blue (back-up) sets of syringes. (Ex. 20, Mays Dep. 204:9-25; Ex. 1, Executioner Dep. 133:6-135:2, 139:6-7.)

RESPONSE:

260. One of the Executioner's assistants (the Lethal Injection Recorder) observes the Executioner prepare the syringes of LIC, documents the preparation of the syringes, and verifies that the procedure has been carried out correctly by verifying the amount of LIC for each syringe, after which the Lethal Injection Recorder labels each syringe. (Ex. 20, Mays Dep. 205:17-206:3; Ex. 1, Executioner Dep. 139:19-141:2.)

RESPONSE:

261. The Protocol requires that the LIC be prepared in accordance with the directions of the Pharmacy. (Ex. 6, Protocol at 39.)

RESPONSE:

262. The Protocol requires that the vecuronium bromide be reconstituted with bacteriostatic water. (Ex. 6, Protocol at 39.)

RESPONSE:

263. The Executioner reconstitutes the vecuronium bromide with bacteriostatic water by drawing 10 milligrams of the bacteriostatic water, injecting it into the vial of vecuronium powder, shaking the mixture until it is clear and verifying there are no particles in it, and drawing the mixture back out into the syringe. (Ex. 1, Executioner Dep. 114:1-2, 145:21-146:2, 146:14-21, 147:2-13.)

RESPONSE:

264. The Pharmacy has provided directions to TDOC for preparation of the compounded LICs for administration. (Ex. 35, Pharmacist Dep. 186:18-1, 189:11-15, 202:22-25, 203:13-15; Ex. 37, Midazolam Storage and Preparation Instructions at 1-2; Ex. 39, Potassium Chloride Preparation Instructions at 1-2.)

RESPONSE:

265. The Pharmacy's directions for preparation of the compounded midazolam call for a twenty-step procedure starting with moving four vials of midazolam from the freezer to the refrigerator 24 hours prior to use to allow the drug to thaw, and 19 additional steps to be followed on the day of the execution to mix midazolam and saline in syringes. (Ex. 37, Midazolam Storage and Preparation Instructions at 1-2.)

RESPONSE:

266. The Pharmacy's procedure for preparing midazolam emphasizes aseptic technique and taking special care not to contaminate any of the supplies, and provides that if contamination occurs, all supplies must be discarded, new supplies obtained, and the process begun again. (Ex. 37, Midazolam Storage and Preparation Instructions at 1-2.)

RESPONSE:

267. The Pharmacy's procedure for preparing midazolam includes specific direction to inspect each syringe filled with midazolam to ensure no particles or discoloration are observed, and a description of how the midazolam should look in the syringe (clear liquid without debris). (Ex. 37, Midazolam Storage and Preparation Instructions at 1-2.)

RESPONSE:

268. The Pharmacy's directions for preparation of the compounded potassium chloride call for a seventeen-step procedure starting with moving two vials of potassium chloride from the freezer to the refrigerator 24 hours prior to use to allow the drug to thaw, and 16 additional steps to be followed on the day of the execution to withdraw potassium chloride from the vials into syringes. (Ex. 39, Potassium Chloride Preparation Instructions at 1-2.)

RESPONSE:

269. The Pharmacy's procedure for preparing potassium chloride emphasizes aseptic techniques and taking special care not to contaminate any of the supplies, and provides that if contamination occurs, all supplies must be discarded, new supplies obtained, and the process begun again. (Ex. 39, Potassium Chloride Preparation Instructions at 1-2.)

RESPONSE:

270. The Pharmacy's procedure for preparing potassium chloride includes specific direction to inspect each syringe filled with midazolam to ensure no particles or discoloration are observed, and a description of how the midazolam should look in the syringe (clear liquid without debris). (Ex. 39, Potassium Chloride Preparation Instructions at 1-2.)

RESPONSE:

271. The Executioner prepares the LIC in accordance with the directions of the Pharmacy. (Ex. 1, Executioner Dep. 113:17-114:7, 139:6-13, 157:1-16, 167:9-15.)

RESPONSE:

272. The Lethal Injection Recorder documents the preparation of the LIC on a form called the Chemical Preparation Time Sheet. (Ex. 6, Protocol at 39; Ex. 41, 5/16/19 Chemical Preparation Time Sheet at 1-2; Ex. 42, 8/9/18 Chemical Preparation Time Sheet at 1-2; Ex. 1, Executioner Dep. 144:7-18; Ex. 27, IV Team Member 2 Dep. 51:22-52:11.)

RESPONSE:

273. The Executioner checks the expiration dates on the drugs and saline as well as equipment such as needles which also have expiration dates, both when they are received and before use in an execution, to ensure they are not expired. (Ex. 1, Executioner Dep. 119:12-120:1, 131:8-11.)

RESPONSE:

274. Dr. Almgren has no knowledge of a dose of potassium chloride which has fallen out of solution after being received by the Department. (Ex. 29, Almgren Dep. 172:14-176:17.)

RESPONSE:

275. The instructions contained in the protocol and provided by the pharmacist are sufficient to ensure correct preparation and administration of compounded midazolam and

potassium chloride. (Ex. 14, Patel Rep. at 13-14; Ex. 29, Almgren Dep. 177:8-178:23, 183:1-185:13.)

RESPONSE:

276. Proper storage of lethal injection chemicals does not require constant monitoring of temperature. (Ex. 14, Patel Rep. at 13.)

RESPONSE:

277. Dr. Almgren did not identify any lethal injection chemicals that have been used in a Tennessee execution past their beyond use date. (Ex. 29, Almgren Dep. 191:5-196:18.)

RESPONSE:

IV. Plaintiff's Proposed Alternatives

A. Single Bullet to the Back of the Head

278. TDOC is unaware of any state that has adopted an execution protocol involving only a single bullet to the back of the head. (Ex. 4, TDOC 30(b)(6) Dep. 185:2-7.)

RESPONSE:

279. Gunshots to the head produce a large variance in outcomes, including the possibility that the person shot will remain conscious and capable of movement. (Ex. 8, Williams Dep. 34:1-35:9.)

RESPONSE:

280. Hitting the brain stem with a bullet is difficult because of the small size of the brain stem. (Ex. 8, Williams Dep. 35:10-21.)

RESPONSE:

281. It is well documented in trauma literature that pistol bullets striking the human head at certain angles will deflect off the skull without penetration. (Ex. 8, Williams Dep. 37:2-6.)

RESPONSE:

B. Firing Squad

282. The Tennessee legislature does not recognize firing squad as a legal means of execution in Tennessee. (Ex. 4, TDOC 30(b)(6) Dep. 180:20-23.)

RESPONSE:

283. TDOC does not know where it would begin to address firing squad safety measures and contingencies, including preventing ricochet, how to control confidentiality, the safety and security of the event and facility, securing the offender, and the type of weapon and ammunition. (Ex. 4, TDOC 30(b)(6) Dep. 181:12-25, 183:14-23.)

RESPONSE:

284. TDOC is unaware of any facilities it has where an execution by firing squad could occur. (Ex. 4, TDOC 30(b)(6) Dep. 179:25-180:4.)

RESPONSE:

285. TDOC is not able to execute someone by method of firing squad. (Ex. 4, TDOC 30(b)(6) Dep. 180:15-16.)

RESPONSE:

286. TDOC does not know what the physical facility requirements are for a firing squad execution. (Ex. 4, TDOC 30(b)(6) Dep. 180:18-20.)

RESPONSE:

287. Utah conducts executions by firing squad. (Ex. 43, UDC 30(b)(6) Dep. 21:6-9, 58:4-11; Ex. 44, UDC Policy p. 239 (Exhibit 5 to UDC 30(b)(6) Dep.)).

RESPONSE:

288. According to the Utah Department of Correction ("UDC"), executing someone by firing squad involves a high degree of skill. (Ex. 44, UDC Policy p. 239 (Exhibit 5 to UDC 30(b)(6) Dep.); Ex. 43, UDC 30(b)(6) Dep. 73:4-18.)

RESPONSE:

289. 30 days prior to a firing squad execution, UDC staff rehearses almost daily, for up to three hours at a time. (Ex. 43, UDC 30(b)(6) Dep. 74:16-75:5.)

RESPONSE:

290. In 2003, Utah estimated that it would take 1,180 "man hours" for UDC to conduct a firing squad execution. (Ex. 43, UDC 30(b)(6) Dep. 55:9-13; Ex. 45, Exhibit 4 to UDC 30(b)(6) Dep.)

RESPONSE:

291. UDOC required 1,180 "man hours" to conduct its last firing squad execution in 2010. (Ex. 43, UDC 30(b)(6) Dep. 56:7-15.)

RESPONSE:

292. According to UDC, it cost $165,000 in 2010 to conduct a firing squad execution. (Ex. 43, UDC 30(b)(6) Dep. 77:17-79:9; Ex. 46, Exhibit 7 to UDC 30(b)(6) Dep.).

RESPONSE:

293. Utah's new firing squad execution chamber and adjoining rooms cost $1,500,000 to construct. (Ex. 43, UDC 30(b)(6) Dep. 87:20-88:18.)

RESPONSE:

294. Utah's firing squad execution chamber is outfitted with safety precautions, including: a special chair made of tubular steel; a 4x8 sheet of 2-inch-thick Kevlar behind the execution chair; 2x4s and sandbags behind the execution chair; a cinderblock wall; and bulletproof glass on the four windows in the execution chamber. (Ex. 43, UDC 30(b)(6) Dep. 35:5-36:13, 42:1-18; 45:4-5; Ex. 47, Exhibits 2 and 3 to UDC 30(b)(6) Dep.).

RESPONSE:

295. Utah's firing squad execution chamber is 20x24 feet, and has 10- to 12-foot-high cinderblock walls. (Ex. 43, UDC 30(b)(6) Dep. 40:24-45:11.)

RESPONSE:

296. Utah's firing squad fires guns through five-foot long, six-inch high portals into the execution chamber. (Ex. 43, UDC 30(b)(6) Dep. 42:22-43:9; 44:19-25); Ex. 46, Exhibit 7 to UDC 30(b)(6) Dep.)

RESPONSE:

297. When an inmate is executed by firing squad, blood can stain the floor and walls. (Ex. 43, UDC 30(b)(6) Dep. 26:13-18.)

RESPONSE:

298. UDC has a metal tray designed to hide the flow of the inmate's blood. (Ex. 43, UDC 30(b)(6) Dep. 46:12-47:21.)

RESPONSE:

299. For its last firing squad execution, the inmate wore a dark jumpsuit to hide the blood and thus make the execution "more humane." (Ex. 43, UDC 30(b)(6) Dep. 61:6-14.)

RESPONSE:

300. Utah's firing squad has five shooters and two backups. (Ex. 43, UDC 30(b)(6) Dep. 28:11-23.)

RESPONSE:

301. Utah uses a regular sheet of paper as the target that is placed over the inmate's heart in a firing squad execution. (Ex. 43, UDC 30(b)(6) Dep. 33:21-34:6.)

RESPONSE:

302. After the firing squad fires its guns, there is a three-minute waiting period before a doctor checks to see if the inmate is still alive. (Ex. 43, UDC 30(b)(6) Dep. 39:14-21.)

RESPONSE:

303. Death by firing squad would not significantly reduce the risk of severe pain Plaintiff claims is a result of the Tennessee Lethal Injection Protocol. (Ex. 9, Antognini Rep. at 29; Ex. 16, Li Rep. at 5.)

RESPONSE:

304. A person may remain conscious after a fatal gunshot wound to their heart. (Ex. 9, Antognini Rep. at 29-30; Ex. 16, Li Rep. at 4.)

RESPONSE:

305. A person may engage in physical activity after receiving a fatal gunshot wound despite a shredded heart. (Ex. 16, Li Rep. at 4.)

RESPONSE:

306. A bullet that fractures a bone or damages the spinal cord is severely painful. (Ex. 9, Antognini Rep. at 29; Ex. 8, Williams Dep. 94:13-95:2.)

RESPONSE:

307. Firing bullets into the chest could result in the fracture of a rib, the sternum, or the spine. (Ex. 8, Williams Dep. 97:4-99:3.)

RESPONSE:

308. People that suffer gunshot wounds to the chest, particularly where bone is struck, often experience substantial pain. (Ex. 9, Antognini Rep. at 29-30; Ex. 48, Williams Rep. at 4.)

RESPONSE:

309. Some people have survived an initial volley of bullets in a firing squad execution, leading to a second volley of bullets. (Ex. 9, Antognini Rep. at 30; Ex. 8, Williams Dep. 111:3-5.)

RESPONSE:

310. Gunshot wounds produce large variances in pain because of differences in human anatomy. (Ex. 48, Williams Rep. at 6; Ex. 8, Williams Dep. 56:3-21, 91:1-14.)

RESPONSE:

311. For an execution by firing squad to be effective, a 3–5-inch target must be placed precisely over the lower part of the sternum, overlapping the left sternum border, the upper part of the ventricles, the atria, and the other roots. (Ex. 48, Williams Rep. at 12; Williams. Dep. 63:8-17.)

RESPONSE:

312. Wind and rainfall can negatively affect a shooter's ability to aim at or hit a target. (Ex. 8, Williams Dep. 125:6-22.)

RESPONSE:

313. A rifle's sight can be bumped out of alignment. (Ex. 8, Williams Dep. 125:23-25.)

RESPONSE:

314. A firing squad could be supplied with faulty rounds of ammunition for an execution. (Ex. 8, Williams Dep. 126:1-3.)

RESPONSE:

315. A gunshot delivered to 80 percent of the chest will not produce anything close to cardiovascular incapacitation, which is necessary for an effective execution by firing squad. (Ex. 8, Williams Dep. 65:9-16.)

RESPONSE:

316. Brain death will not occur immediately upon cardiovascular incapacitation and instead can take minutes after loss of oxygen to the brain. (Ex. 48, Williams Rep. at 5; Ex. 8, Williams Dep. 65:17-66:25, 106:10-107:13.)

RESPONSE:

317. Placing execution witnesses and a firing squad behind ballistically resistant windows embedded in ballistically resistant walls, with the firing squad firing from a ballistically impervious barricade with small firing slits, can still result in a bullet that ricochets and injures someone other than the condemned. (Ex. 8, Williams Dep. 68:18-69:16.)

RESPONSE:

318. Reducing the possibility of a bullet ricocheting also requires placing the condemned in a chair fixed to a firm platform with a backdrop of heavy lumber, behind which is an absorbent material that slows a bullet down, behind which is a heavy, ballistically impervious blanket. (Ex. 48, Williams Rep. at 13; Ex. 8, Williams Dep. 69:21-70:5.)

RESPONSE:

319. Any member of a firing squad must be trained and certified in marksmanship. (Ex. 8, Williams Dep. 74:3-8.)

RESPONSE:

320. There is an enormous difference between shooting a human and shooting a target because of the basic psychological barrier humans have to killing another human. (Ex. 8, Williams Dep. 75:13-76:9, 76:25-77:3.)

RESPONSE:

321. Death by firing squad could fail due to human error. (Ex. 8, Williams Dep. 78:16-18.)

RESPONSE:

322. The U.S. Army protocols for execution by firing squad, upon which Dr. Williams relied, are both over 60 years old. (Ex. 8, Williams Dep. 80:3-9.)

RESPONSE:

323. Dr. Williams is unaware of any executions by firing squad conducted by the United States military after 1947. (Ex. 8, Williams Dep. 84:20-21, 113:4-6.)

RESPONSE:

324. Dr. Williams's only basis for believing that execution by firing squad is still an authorized means of execution in the United States military is a conversation he had in 2017. (Ex. 8, Williams Dep. 82:2-83:25, 84:22-85:12.)

RESPONSE:

325. A 2006 publication from the United States Army states that military executions will be carried out by lethal injection. (Ex. 8, Williams Dep. 127:8-24.)

RESPONSE:

C. Oral Cocktail

326. The record lacks any evidence that Defendants can obtain secobarbital, digoxin, morphine sulfate, and propranolol for use in executions through ordinary transactional effort. (Ex. 21, Blanke Dep. 65:14-66:5, 88:20-23; Ex. 29, Almgren Dep. 242:16-244:4; Ex. 4, TDOC 30(b)(6) Dep. 171:18-176:7.)

RESPONSE:

327. Plaintiff did not retain experts to testify regarding the effectiveness of a secobarbital cocktail or a cocktail of digoxin, morphine sulfate, and propranolol. (Ex. 21, Blanke Dep. 65:22-25, 113:23-114:1.)

RESPONSE:

328. Dr. Blanke cannot identify any state in the United States that uses medical aid in dying cocktails for executions. (Ex. 21, Blanke Dep. 114:3-6.)

RESPONSE:

329. Oral administration of drugs to uncooperative individuals requires administration through a nasogastric tube. (Ex. 49, Blanke Rep. at 5.)

RESPONSE:

330. Placement of a nasogastric tube without a topical anesthetic causes pain. (Ex. 9, Antognini Rep. at 33; Ex. 49, Blanke Rep. at 5; Ex. 21, Blanke Dep. 81:17-19, 82:9-10.)

RESPONSE:

331. Even with topical anesthesia, placement of a nasogastric tube causes pain. (Ex. 9, Antognini Rep. at 33.)

RESPONSE:

332. Placement of a nasogastric tube can cause gagging, vomiting, perforation of the nasopharynx and esophagus, nosebleed, placement into the trachea, placement into the cranial vault, and damage to nasal passages. (Ex. 9, Antognini Rep. at 33.)

RESPONSE:

333. Placement of a nasogastric tube in an uncooperative inmate would increase the risk of complications. (Ex. 9, Antognini Rep. at 33; Ex. 21, Blanke Dep. 83:1-12.)

RESPONSE:

334. Placement of a nasogastric tube can result in improper insertion of the tube into the lung. (Ex. 21, Blanke Dep. 102:3-25.)

RESPONSE:

335. Avoiding improper insertion of the nasogastric tube is accomplished by having the patient swallow while the tube is placed. (Ex. 21, Blanke Dep. 102:3-25.)

RESPONSE:

336. Administration of a medical aid in dying cocktail into the lung through an improperly placed nasogastric tube would be very uncomfortable for the patient. (Ex. 21, Blanke Dep. 108:9-13.)

RESPONSE:

337. Nonmedical personnel do not place nasogastric tubes. (Ex. 21, Blanke Dep. 97:20-21.)

RESPONSE:

338. Proper placement of a nasogastric tube into the stomach requires use of a stethoscope which can detect bubbling from an injection of air into the stomach through the tube. (Ex. 21, Blanke Dep. 106:20-107:2.)

RESPONSE:

339. Placement of a nasogastric tube can result in bleeding. (Ex. 21, Blanke Dep. 109:9-12.)

RESPONSE:

340. The vast majority of people who elect assisted suicide have severe underlying illnesses which make them more sensitive to the medications used. (Ex. 9, Antognini Rep. at 33; Ex. 21, Blanke Dep. 35:3-6, 121:19-123:19.)

RESPONSE:

341. Patients ingesting medical aid in dying drugs have survived 104 hours after ingestion before dying. (Ex. 9, Antognini Rep. at 33; Ex. 21, Blanke Dep. 117:19-118:1.)

RESPONSE:

342. Nearly one-third of patients consuming medical aid in dying drugs with known durations between ingestion and death took over an hour to die. (Ex. 21, Blanke Dep. Ex. 4.)

RESPONSE:

343. Some patients ingesting medical aid in dying drugs regain consciousness or recover without dying. (Ex. 9, Antognini Rep. at 33; Ex. 21, Blanke Dep. 75:6-9, Ex. 4.)

RESPONSE:

D. Pentobarbital

344. Plaintiff denies knowledge of any source willing to provide pentobarbital or the active pharmaceutical ingredient necessary to compound pentobarbital for use in Tennessee executions. (Ex. 7, Plf.'s Responses to First Set of Req. for Adm. at 2.)

RESPONSE:

345. Plaintiffs' experts are unaware of any source which will provide the Tennessee Department of Correction with pentobarbital for the purpose of carrying out executions. (Ex. 10, Van Norman Dep. 247; Ex. 12, Stevens Dep. 185:25-186:21, 187:4-8; Ex. 29, Almgren Dep. 242:16-244:4.)

RESPONSE:

346. Since 2018, TDOC has searched for pentobarbital but has not found any source from which to obtain pentobarbital for use in execution. (Ex. 3, Drug Procurer Dep. 190:16-193:1; 201:16-21; 230:15-231:3; Ex. 4, TDOC 30(b)(6) Dep. 84:12-18.; *see also* Ex. 35, Pharmacist Dep. 47:18-49:8, 36:4-38:1 *and* Ex. 2, Inglis Dep. 37:16-18, 67:4-68:5.)

RESPONSE:

347. TDOC has instructed the compounding Pharmacy and the Drug Procurer to look for any amount of pentobarbital sufficient to carry out an execution, in any form. (Ex. 4, TDOC 30(b)(6) Dep. 125:20-24, 163:19-24; Ex. 50, Former Pharmacy Owner Dep. 33:2-15, 116:24-117:6 *see also* Ex. 3, Drug Procurer Dep. 152:20-22, 155:1-10, 163:3-10, 223:20-224:22, 226:2-10, 227:4-8 *and* Ex. 35, Pharmacist Dep. 40:16-41:7, 41:22-42 *and* Ex. 2, Inglis Dep. 110:3-20, 155:12-17.)

RESPONSE:

348. For years, the Drug Procurer and the compounding Pharmacy have worked together to attempt to find pentobarbital. (Ex. 4, TDOC 30(b)(6) Dep. 143:14-25; Ex. 3, Drug Procurer Dep. 153:20-154:22, 155:1-10, 156:23-157:5, 159:9-22, 161:18-24, 163:3-10, 190:16-19; Ex. 35, Pharmacist Dep. 39:20-41-21; *see also* Ex. 2, Inglis Dep. 66:2-14.)

RESPONSE:

349. The compounding Pharmacy was unable to order commercially available pentobarbital when last it checked in March 2021. (Ex. 35, Pharmacist Dep. 41:18-42:1, 49:1-12.)

RESPONSE:

350. TDOC has also attempted to obtain the necessary active pharmaceutical ingredients to compound pentobarbital as recently as December 2019. (Ex. 3, Drug Procurer Dep. 152:20-25; Ex. 50, Former Pharmacy Owner Dep. 33:9-34:11; 22 4-5.)

RESPONSE:

351. The DEA has prohibited the Compounding Pharmacy from importing pentobarbital for use in lethal injections from overseas. (Ex. 4, TDOC 30(b)(6) Dep. 151:3-20; Ex. 50, Former

Pharmacy Owner Dep. 39:7-41:2; Ex. 3, Drug Procurer Dep. 203:21-204:9; Ex. 2, Inglis Dep. 153:8-23.)

RESPONSE:

352. In August 2021, Commissioner Parker contacted another state in search of pentobarbital, and he was told no one had a viable source for Tennessee to obtain either commercially manufactured or compounded pentobarbital. (Ex. 4, TDOC 30(b)(6) Dep. 142:14-143:4.)

RESPONSE:

353. Plaintiff outright denies knowledge of any source willing to provide pentobarbital or the active pharmaceutical ingredient necessary to compound pentobarbital for use in Tennessee executions. (Ex. 7, Plf.'s Responses to First Set of Req. for Adm. at 2.)

RESPONSE:

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CERTIFICATE OF SERVICE

I certify that on March 16, 2022, a copy of the foregoing was filed and served via the Court's CM/ECF system on the following:

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